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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/026,319

12/20/2001

Richard Williams

TI-33323

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01/17/2006

TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

BAYARD, EMMANUEL

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/026,319	Applicant(s) WILLIAMS ET AL. <i>all</i>	
	Examiner Emmanuel Bayard	Art Unit 2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 9 recites the limitation "(e), (f), (g) and repeating steps (a)-(d)" in lines 2-4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Miya et al U.S. Patent No 5,818,869.

As per claims 1, Miya et al teaches a method of detecting packets in a communications channel comprising: (a) sampling the communications channel at a first sampling rate, producing a sequence of samples (see figs. 10-11 element 104 and col.3, lines 21-25); (b) a matched filter for correlating at least one sample of the sequence of samples (see figs.10-11 element 105 and col.2, lines 27-30 and col.3, lines

24-27, 57-60) with one or more samples of the sequence of samples (see figs.10-11 clock samples element 103) to generate a plurality of correlation results (see the two outputs of 105); an envelope detector is the same as the claimed (computing a correlation) (see figs. 10-11 element 106 and col.3, lines 25-27) value from the plurality of correlation results; (c) comparing the correlation result with a threshold (see figs.10-11 element 108 and col.3, lines 27-40, 65-67 and col.4, lines 13-40); and (d) feedback loop is the same as the claimed (sampling the channel at a second sampling rate) (see figs. 10-11 feedback elements 110-103 and col.8, lines 8-35, 65-67 and col.9, lines 1-9) based on the result of the comparison.

As per claim 3, Miya et al teaches wherein the correlating step comprises correlating the sequence of samples with a reference sequence of samples stored in a memory (see figs.10-11 element 109 and col.4, lines 14-15).

As per claim 4, Miya et al teaches, wherein the first sampling rate is sufficient to accurately tracking loop is the same as the claimed (recover) (see figs. 10-11 feedback elements 110-103) data encoded in the packet.

As per claim 5, Miya et al teaches wherein the second sampling rate is greater than the first sampling rate (see col.8, line 67).

As per claim 6, Miya et al inherently teaches wherein the second sampling rate is an integer multiple of the first sampling rate.

As per claim 7, Miya et al inherently teaches wherein the second sampling rate is an integer multiple of a minimum sampling rate required to accurately keeping track is

the same as the claimed (recover) (see col.11, lines 9-10) data encoded (col.6, line 42) in the packet.

As per claim 8, Miya et al inherently teaches wherein the second sampling step occurs only if the correlation result exceeds the threshold.

As per claims 9 and 12, Miya et al does teach decoding the packet (see col.3, lines 43-50 and col.4, lines 62-67 and col.6, lines 11-15); transmitting modulated spreading codes is the same as the claimed (processing any data encoded in the packet) since a decoding step is achieved in the receiver (see col.2, lines 25-26 and col.3, lines 53-55) in the packet;(g) repeating steps (a)-(d) (see claim 1 above).

As per claim 10, Miya et al does teach inherently wherein following the processing step, the method further comprising the step of changing the sampling rate back to the first sampling rate after the completion of processing the packet (see figs. 10-11 feedback elements 110-103).

As per claim 11, Miya et al does teach inherently wherein following the processing step, the method further comprising the step of stopping the processing of the packet and changing the sampling rate back to the first sampling rate after determining an erroneous detection (see col.8, lines 55-67).

As per claim 13, Miya et al inherently teaches wherein the correlation step is performed after a new sample is produced as to accurately compute the energy of the sample sequence with the lag N.

As per claim 14, Miya et al inherently teaches teach wherein the correlation step is performed after a specified number of new samples are produced as to accurately compute the energy of the sample sequence with the lag N.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miya et al U.S. Patent No 5,818,869 in view of Doi et al U.S. Patent No 5,870,594.

As per claims 15 and 19, Miya et al teaches a receiver for a communications system comprising: an antenna or Radio frequency receiver is the same as the claimed (signal detector) (see fig.3 element 52 or 54), the signal detector containing circuitry to detect signals transmitted on a communications channel; a sampler (see figs. 10-11 element 104 and col.3, lines 21-25) coupled to the signal detector, the sampler containing circuitry to sample the signals detected on the communications channel by the signal detector at a variable sampling rate and produce a sequence of samples, wherein the sampler samples the communications channel at a first sampling rate when attempting to detect a packet and at a second sampling rate when a packet has been detected (see col.4, lines 55-60); a matched filter is the same as the claimed correlator coupled to the sampler, the matched filter (correlator) containing circuitry to correlate at least one sample of the sequence of samples (see figs.10-11 element 105 and col.2,

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lines 27-30 and col.3, lines 24-27, 57-60) with one or more samples of the sequence of samples (see figs.10-11 clock samples element 103) to generate a plurality of correlation results (see the two outputs of 105); an envelope detector is the same as the claimed (computing a correlation) (see figs. 10-11 element 106 and col.3, lines 25-27) value from the plurality of correlation results; a processor (see figs. 10-11 element 101) coupled to the correlator and the sampler, the processor containing circuitry to detect (see figs. 10-11 element 106 and col.3, lines 25-27) the presence of a packet based on results produced by the correlator (c) by comparing the correlation result with a threshold (see figs.10-11 element 108 and col.3, lines 27-40, 65-67 and col.4, lines 13-40) to decode and process (see col.3, lines 43-50 and col.4, lines 62-67 and col.6, lines 11-15) data contained in a packet transmitted on the communications channel, and to control the sampling rate of the sampler (see figs. 10-11 feedback elements 110-103).

Miya et al does not teach wherein the sampler comprising: a latch coupled to the signal detector, the latch containing circuitry to capture a signal value at a first input and produce a sample corresponding to the captured signal value at an output; and a sampling clock coupled to the latch and the processor, the sampling clock containing circuitry to control the sampling rate of the sampler based on control information from the processor.

Doi et al teaches a sampler comprising a latch (see fig.1 element 105) coupled to the signal detector (see fig.1 element 106), the latch containing circuitry to capture a signal value at a first input and produce a sample corresponding to the captured signal value at an output (see col.2, lines 65-67 and col.3, lines 1-3 and col.5, lines 10-11);

and a sampling clock (see fig.1 element 107 and col.5, lines 7-15) coupled to the latch and the processor, the sampling clock containing circuitry to control the sampling rate of the sampler based on control information from the processor.

It would have been obvious to one of ordinary skill in the art to implement the teaching of Doi into Miya et al as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 16, Miya et al and Doi in combination would teach, wherein the processor changes the sampling rate back to the first sampling rate after the completed reception of the packet as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 17, Miya et al and Doi in combination would teach wherein the processor changes the sampling rate back to the first sampling rate after the processor determines that the packet was destined for a different receiver as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 18, Miya et al and Doi in combination would teach wherein the processor changes the sampling rate back to the first sampling rate after determining an

erroneous detection of the packet as to control clock timing by detection of the deviation of the clock timing from a desired reference timing during both start-up and normal operations and using the result of the detection for applying feedback to the clock generator as taught by Doi (see col.1, lines 63-67).

As per claim 20, Miya et al and Doi would teach wherein the signal detector is a sensor capable of detecting wirelessly transmitted signals as to accurately performing synchronization during the operation.

As per claim 21, Miya et al and Doi in combination would teach wherein the signal detector is a sensor capable of detecting signals transmitted on a wire-line communications channel as to accurately performing synchronization during the operation

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ramesh et al U.S. Patent No 5,838,739 teaches a channel estimator.

Hsieh et al U.S. Patent No 6,643,336 B1 teaches a DC offset.

Okamoto U.S. Patent No 5,896,423 teaches a spread spectrum signal receiver.

Critchlow U.S. Patent No 5,276,706 teaches a system and method for minimizing frequency offsets.

Hiramatsu et al U.S. Patent No 6,289,064 B1 teaches a synchronization equipment.

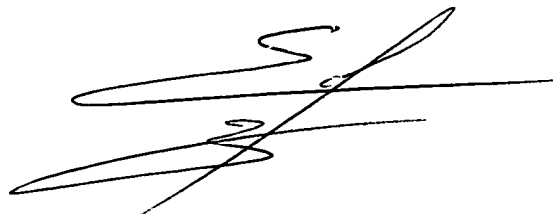
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth can be reached on 571 272 3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2638

1/11/06

A handwritten signature in black ink, appearing to be 'E. Bayard', written over a horizontal line.